

REMARKS

INTRODUCTION:

In accordance with the foregoing, no claims have been canceled, no claims have been amended, and no claims have been added. No new matter is being presented, and approval and entry are respectfully requested.

Claims 1, 4-9 and 12-16 are pending and under consideration. Reconsideration is respectfully requested.

AUTOMATIC "SPECIAL" STATUS:

The Applicants respectfully note that the present application has been pending for more than five (5) years. Accordingly, the Applicants respectfully acknowledge the consideration of the present application as "special" as mandated by MPEP 707.02.

REJECTION OF CLAIMS 1, 4-7, 9 AND 12-15 UNDER 35 U.S.C. §103:

In the Office Action, at page 2, claims 1, 4-7, 9 and 12-15 were rejected under 35 U.S.C. §103(a) as being unpatentable over U.S. Patent No. 4,507,042 issued to Suzuki et al. in view of U.S. Patent No. 4,602,345 issued to Yokoyama and further in view of U.S. Patent No. 5,770,936 issued to Hirai et al., and European Patent Document No. 0 672 496 by Nakano et al. The reasons for the rejection are set forth in the Office Action and therefore not repeated. The Applicants respectfully traverse this rejection.

As set forth in greater detail below, the Applicants respectfully submit that the rejection fails to establish a prima facie case of obviousness in at least two respects. First, the applicants respectfully submit that the combination fails to teach or suggest all the features of the claimed invention. Second, the prior art does not provide a suggestion or motivation to combine the references.

To establish a prima facie case of obviousness, three basic criteria must be met. MPEP 2142. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Id. Second, there must be a reasonable expectation of

success. Id. Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations. Id. The teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art, and not based on applicant's disclosure. Id.

The Combination Fails to Teach or Suggest all the Features of Claims 1 and 9

Regarding claims 1 and 9, the Applicants respectfully submit that the combination of Suzuki, Yokoyama, Hirai and Nakano fails to teach or suggest:

wherein only said final rotational axis of the movable arm is selectively rotated when performing a machining operation on a workpiece (claim 1); or

selectively rotating only said final rotational axis to perform cutting machining on the workpiece (claim 9).

In admitting that Yokoyama fails to expressly mention these features, the Examiner appears to take the position that Yokoyama inherently suggests these features. Specifically, the Examiner states:

Yokoyama obviously encompasses teaching moving only the final rotational axes when the turning of the wrist $+\alpha/-\alpha$ and $+\beta/-\beta$ is indicated.

However, a review of Yokoyama reveals no mention whatsoever of rotating only a final rotational axis of a movable arm, or selectively rotating only a final rotational axis to perform cutting machining on a workpiece. Rather, Yokoyama is directed to a method and system for transforming model commands into executable commands to control the operation of a robot. To imbue one of ordinary skill in the art with knowledge of the invention in suit, when no prior art reference or references of record convey or suggest that knowledge, is to fall victim to the insidious effect of a hindsight syndrome wherein that which only the inventor taught is used against its teacher. *W.L. Gore & Associates v. Garlock, Inc.*, 721 F.2d 1540, 1553, 220 USPQ 303, 312-13 (Fed. Cir.) 1983, *cert. denied*, 469 U.S. 851 (1984).

The Prior Art does not Provide a Suggestion or Motivation to Combine the References

Further regarding claims 1 and 9, the Applicants respectfully submit that the prior art has not been shown to contain a valid line of reasoning suggesting or motivating one of ordinary skill to combine the teachings of the references. That is, the rejection violates the very rule of law set forth by the Examiner in the most recent Office Action: the rejection contains "knowledge

gleaned only from the Applicant's disclosure¹." Rather than citing specific disclosures in the prior art for providing a motivation to combine the teachings of the references, the Examiner states on page 3 of the Office Action:

It would have been obvious to a person of ordinary skill in the art at the time the invention was made to implement a well known controller and the cutting tool of Hirai in combination with the shape of the end effector taught by Nakano to the robot arm of Suzuki in order to facilitate moving the cutting tool around the object being cut.

It is impermissible to use the claimed invention as an instruction manual or "template" to piece together the teachings of the prior art so that the claimed invention is rendered obvious. *In re Fritch*, 972 F.2d 1260, 23 USPQ2d 1780, 1784 (Fed. Cir. 1992). The Applicants respectfully submit that the Examiner has failed to establish a valid line of reasoning providing a motivation to search the various technical fields of the references, locate the relevant features in the numerous references, and combine the teachings of those references.

For at least these reasons, the Applicants respectfully submit that the combination of Suzuki, Yokoyama, Hirai and Nakano fails to establish a prima facie case of obviousness. Accordingly, claims 1 and 9 are deemed to be allowable over the art of record. Therefore, withdrawal of the §103(a) rejection of claims 1 and 9 is respectfully requested.

Claims 4-7 and 12-15 Are Allowable Due to their Dependencies

Regarding the rejection of claims 4-7 and 12-15, these claims are dependent, directly or indirectly, on one of either independent claims 1 or 9, and are therefore believed to be allowable for at least the reasons noted above.

REJECTION OF CLAIM 16 UNDER 35 U.S.C. §103:

In the Office Action, at page 4, claim 16 was rejected under 35 U.S.C. §103(a) as being

¹ At page 5, the Office Action states:

In response to applicant's argument on page 6, last paragraph, that the examiner's conclusion of obviousness is based upon improper hindsight reasoning, it must be recognized that any judgment on obviousness is in a sense necessarily a reconstruction based upon hindsight reasoning. But as long as it takes into account only knowledge which was within the level of ordinary skill at the time the claimed invention was made, and does not include knowledge gleaned only from the applicant's disclosure, such a reconstruction is proper. See *In re McLaughlin*, 443 F. 2d 1392, 170 USPQ 209 (CCPA 1971).

unpatentable over Suzuki in view of Yokoyama, and further in view of Hirai, and U.S. Patent No. 4,755,232 issued to Thones et al. The reasons for the rejection are set forth in the Office Action and therefore not repeated. The Applicants respectfully traverse the rejection.

The Combination Fails to Teach or Suggest all the Features of Claim 16

The Applicants respectfully submit that the combination of Suzuki, Yokoyama, Hirai, and Thones fails to teach or suggest:

- (a) arranging the workpiece so that a central axis of the workpiece is aligned with the final rotational axis of said movable arm; and
- (b) rotating said final rotational axis and driving said variable axis in synchronism with the rotation of said final rotational axis to perform a saddle-like cutting or forming a hole on the workpiece.

While there may be some merit to the Examiner's argument in that Thones may depict a workpiece relative to a rotational axis of a movable arm, the Applicants respectfully submit that Thones fails to disclose arranging a workpiece so that a central axis of the workpiece is aligned with a final rotational axis of a movable arm. Accordingly, the Applicants respectfully submit that neither Thones nor Harai teach or suggest rotating the final rotational axis and driving the variable axis in synchronism with the rotational of the final rotational axis *to perform saddle-like cutting or forming a hole on the workpiece*.

For at least these reasons, the Applicants respectfully submit that the combination of Suzuki, Yokoyama, Hirai and Thones fails to establish a prima facie case of obviousness. Accordingly, claim 16 is deemed to be allowable over the art of record. Therefore, withdrawal of the §103(a) rejection of claim 16 is respectfully requested.

The Prior Art does not Provide a Suggestion or Motivation to Combine the References

It is also respectfully submitted that the Examiner has not met his initial burden of providing a valid line of reasoning from the prior art which would have led one of ordinary skill to modify the teachings of the relied upon prior art in the manner suggested by the Examiner. Rather, the Office Action simply states:

An ordinary person skilled in the art at the time the invention was made would be able to use the tool taught by Harai and to control rotation [sic] of the final axis 20 (fig. 1) and the tool piece of Harai in order to perform cutting hole on the uneven surface of the

workpiece.

Therefore, it is submitted that the Examiner's proposed combination of teachings amounts to an improper hindsight reconstruction and should be withdrawn.

REJECTION OF CLAIM 8 UNDER 35 U.S.C. §103:

In the Office Action, at page 4, claim 8 was rejected under 35 U.S.C. §103(a) as being unpatentable over U.S. Patent No. 5,570,920, issued to Crisman et al. in view of an article entitled "Dexterous Telemanipulation with Four Fingered Hand System" by Bruno M. Jau (hereinafter referred as "Bruno"). The reasons for the rejection are set forth in the Office Action and therefore not repeated. The Applicants respectfully traverse the rejection.

The Combination Fails to Teach or Suggest all the Features of Claim 8

The Applicants respectfully submit that the combination of Crisman and Bruno fails to teach or suggest:

a tool unit mounted on a distal end of said movable arm, having an additional rotation axis biased with respect to a final rotational axis of said movable arm and an effecting end biased with respect to said additional rotation axis and directed to said additional rotation axis, and a variable axis varying a position or a direction of the effecting end with respect to the final rotational axis of said moveable arm.

Claim 8 relates to an arrangement of an embodiment in which the tool unit has an additional rotation axis and a variable axis. The Applicants respectfully submit that the Office Action fails to specify how the combination of Crisman and Bruno discloses or suggests this particular feature.

For at least this reason, the Applicants respectfully submit that the combination of Crisman and Bruno fails to establish a prima facie case of obviousness. Accordingly, claim 8 is deemed to be allowable over the art of record. Therefore, withdrawal of the § 103(a) rejection of claim 8 is respectfully requested.

The Prior Art does not Provide a Suggestion or Motivation to Combine the References

It is also respectfully submitted that the Examiner has not met his initial burden of

providing a valid line of reasoning from the prior art which would have led one of ordinary skill to modify the teachings of the relied upon prior art in the manner suggested by the Examiner.

Rather, the Office Action simply states:

It would have been obvious to a person of ordinary skill in the art at the time the invention was made to attach the end effector of Crisman to the robot with a controller and the wrist structure of the robot arm of Bruno in order to provide full motion of the robot arm as well as the end effector.

Therefore, it is submitted that the Examiner's proposed combination of teachings is an improper hindsight reconstruction and should be withdrawn.

CONCLUSION:

In accordance with the foregoing, it is respectfully submitted that all outstanding objections and rejections have been overcome and/or rendered moot. And further, that all pending claims patentably distinguish over the prior art. Thus, there being no further outstanding objections or rejections, the application is submitted as being in condition for allowance which action is earnestly solicited.


If the Examiner has any remaining issues to be addressed, it is believed that prosecution can be expedited by the Examiner contacting the undersigned attorney for a telephone interview to discuss resolution of such issues.

If there are any underpayments or overpayments of fees associated with the filing of this Amendment, please charge and/or credit the same to our Deposit Account No. 19-3935.

Respectfully submitted,

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